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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/229,898	01/14/1999	SIMON MICHAEL ROWE	1263.0700	5189

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EXAMINER	
SEALEY, LANCE W	
ART UNIT	PAPER NUMBER
2671	

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/229,898	ROWE ET AL.	
	Examiner	Art Unit	
	Lance W. Sealey	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the amendment of 29 November 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-116,118-129,131-166,168-179,181-192,195-204 and 207-251* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22,24-39,41,44-116,118-129,131-166,168-179,181-192,195-204,207-236 and 238-251* is/are allowed.

6)☒ Claim(s) *1-5,11-13,15-21,23,40,42,43 and 237* is/are rejected.

7)☒ Claim(s) *6-10 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Allowable Subject Matter

1. Claims 22, 24-39, 41, 42/22, 43/22, 44-54, 55-64, 65-116, 118-129, 131-166, 168-179, 181-192, 195-204, 207-236 and 240-251 are still allowed and claims 6-10 and 14 are still objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, the claims below are still rejected.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 11-13, 15, 21, 23, 40, 42/1, 42/21, 43/1, 43/21 and 237 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks (U.S. Pat. No. 6,025,847) in view of Mohan et al. ("Mohan," U.S. Pat. No. 6,434,257).

4. With respect to claims 1, 21, 23, 40 and 237, Marks, in disclosing a 3D modeling system with visual feedback, also discloses a method of processing image data defining a plurality of

sequences of images, each from a respective camera, of a plurality of objects moving in a scene to produce signals defining representations of the object in a 3D computer model, and generating object representations in the three-dimensional computer model (col.6, ll.42-48).

5. However, Marks does not disclose the specific details of the applicants' method; these are disclosed by Mohan.

6. Mohan, in disclosing a size recognition system, also discloses:

- processing image data from first and second cameras to identify image data relating to objects in the scene (See FIG.2 and col.6, l.44-col.7, l.20. Step **210** features image data produced by a first camera; step **255** stores this image data; step **271** envisions this stored image being compared to another image produced by a camera ("second camera", see col.7, ll.11-13));
- processing the identified image data from the first camera for each object to define an object representation in a modelling space having a height dependent upon the image data for the object from the first camera (step **230**, FIG.2, and col.6, ll.53-55; height is necessarily "one or more size features" to be considered);
- processing the identified image data from the second camera for each object to define an object representation in a modelling space having a height dependent upon the image data for the object from the second camera (step **230**, FIG.2, and col.6, ll.53-55. Camera **120**,

FIG.1, becomes the "second camera" after the first image is stored; see col.7, ll.11-13.); and

- comparing the height of the representation of each object generated in dependence upon image data from the first camera with the height of the representation of the corresponding object generated in dependence upon image data from the second camera (step **269**).

7. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to use the Mohan system of comparing object sizes in the Marks modeling system. This combination would increase efficiency because more than one object could be processed at one time (Mohan, col.3, ll.37-45).

8. The other claims in this rejection will now be considered: With respect to claim 2, Marks discloses the modelling space in which the object representations are defined using image data from the first camera and image data from the second camera as three-dimensional computer model (col.6, ll.42-48).

9. Concerning claim 3, Marks discloses (col.2, ll.5-17) the step of generating object representations in the three-dimensional computer model comprises modifying the taller representation (col.2, ll.12-14) when the heights of corresponding representations are not within a predetermined amount (actual location of physical object, col.2, ll.9-10) of each other.

10. Regarding claim 4, Marks discloses a method wherein when the heights of corresponding representations are not within the predetermined amount of each other, the taller representation is modified to give a representation having a height based on the height of the smaller representation (col.2, ll.5-17).

11. With respect to claim 5, Marks discloses a method wherein when the heights of corresponding representations are not within the predetermined amount of each other, a further representation is defined in the three-dimensional model using part of the image data from which the taller representation was defined (col.2, ll.5-11).

12. Concerning claim 11, Marks discloses an object representation defined as a planar surface (col.2, ll.11-14). Neither Marks nor Mohan directly disclose a base on a predetermined surface in the modelling space and with a position and size in dependence upon a polygon bounding the image data for the object, but it is obvious from Mohan that screen **160**, FIG.1, shows objects, which are bounded by polygons, in their real-life proportions to each other.

13. Regarding claim 12, Mohan discloses the polygon as a rectangle (a square screen is a rectangle).

14. With respect to claim 13, Mohan discloses the sides of the rectangle as being parallel to the sides of the image (in a rectangular screen, the sides are parallel).

15. Concerning claim 15, Mohan discloses a planar surface lying within a vertical plane (whatever is shown in the Mohan screen lies in a vertical plane because the screen has dimensions on the y (vertical) axis).

16. Regarding claim 42/1 and 42/21, Marks discloses a storage medium for storing instructions for causing a programmable processing apparatus to become operable to perform a method according to claim 1 (memory device **104**, FIG.1).

17. Finally, with respect to claim 43/1 and 43/21, Marks discloses a signal conveying instructions for causing a programmable processing apparatus to become operable to perform a method according to claim 1 (computer **100**, FIG.1).

18. Therefore, in view of the foregoing, claims 1-5, 11-13, 15, 21, 23, 40, 42/1, 42/21, 43/1, 43/21 and 237 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks in view of Mohan.

19. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks in view of Mohan and further in view of Goldberg et al. ("Goldberg," U.S. Pat. No. 5,877,779).

20. However, neither Marks nor Mohan disclose, with respect to claim 16, generating image data by rendering an image of the three-dimensional computer model in which texture data based on the processed image data is rendered onto the representation of each object. This is disclosed by the Goldberg method and apparatus for efficient rendering of 3D scenes at col.2, ll.5-11.

21. Therefore, it would have been obvious to one of ordinary skill in the art at the time this invention was made to incorporate the Goldberg rendering method in the Marks-Mohan modeling system. This would greatly increase the efficiency and throughput of graphics data in the rendering pipeline (Goldberg, Abstract, next to the last sentence).

22. The remainder of the claims in this rejection will now be considered: With respect to claim 17, Marks discloses the step of generating a signal conveying the image data in col.6, ll.42-48.

23. Concerning claim 18 and 20, Marks discloses the step of recording the signal (col.2, ll.5-8-creating the 3D model for modification implies storing ("recording")).

24. Finally, regarding claim 19, Marks discloses the step of displaying an image of the objects using the generated image data (col.2, ll.11-14).

25. Therefore, in view of the foregoing, claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks in view of Mohan and further in view of Goldberg.

Remarks

26. The examiner, persuaded by the applicants' assertion of the inapplicability of Grumet (U.S. Pat. No. 4,601,053) in the rejections of claims 1-5, 11-13, 15, 21, 23, 40, 42/1, 42/21, 43/1, 43/21 and 237 in the last Office action, substitutes Mohan for Grumet. The 35 U.S.C. 101 rejection of claims 43/1 and 43/21 is also withdrawn.

27. However, the examiner is not persuaded by the applicants' assertion that Marks is inapplicable to reject these claims. In the last response, the applicants argued that Marks does not teach processing sequences of images, processing images from different cameras, or processing images of moving objects.

28. With respect to "sequences of images", col.6, l.39 of Marks discloses a "first image", and col.6, l.44 discloses a "second image". Since that would constitute a "sequence of images", and the Marks process can be executed more than once, Marks does indeed teach "sequences of images."

29. However, even if Marks did not disclose "sequences of images", elements in a preamble to a claim are not accorded any patentable weight when (1) they only recite the purpose of a process or the intended use of organizational elements and (2) the organizational elements recited in the body of the claim do not refer back to the preamble for their description. In this instance, "sequences of images" is only an intended use of the invention defined by claim 1 and similar claims, satisfying prong (1), and the organizational elements recited in the body of claim 1 and similar claims do not refer back to the "sequences of images" element in the preamble, satisfying prong (2). Therefore, the "sequences of images" element does not make claim 1 and similar claims any more or less patentable.

30. With respect to "processing images from different cameras", claim 1 and similar claims do not require that the pictures be taken from different cameras; they require that each image be

taken from respective cameras. According to the Merriam-Webster Dictionary (1997), respective means "particular, separate". "Particular" means "of or relating to a specific person or thing." Under these definitions, an image only needs to correspond to a camera, whether it is the same camera (Marks, col.6, ll.35-39) or possibly more than one camera is involved (Mohan, col.7, ll.11-13, does not rule out that the reference image and the target image could be taken by different cameras). Therefore, Marks teaches "images each taken from a respective camera" as required by claim 1 and similar claims.

31. With respect to "processing images of moving objects", col.3, ll.34-35 of Marks recites, "The digital camera **130** captures images of *any* (italics added for emphasis) object within its field of view". "Any object" includes "moving object." Therefore, Marks inherently teaches processing images of moving objects.

32. However, even if Marks did not disclose "processing images of moving objects", elements in a preamble to a claim are not accorded any patentable weight when (1) they only recite the purpose of a process or the intended use of organizational elements and (2) the organizational elements recited in the body of the claim do not refer back to the preamble for their description. In this instance, "moving objects" represents only an intended use of the invention defined by claim 1 and similar claims, satisfying prong (1), and the organizational elements recited in the body of claim 1 and similar claims do not refer back to the "moving

objects" element in the preamble, satisfying prong (2). Therefore, the "moving objects" element does not make claim 1 and similar claims any more or less patentable.

Conclusion

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lance Sealey whose telephone number is (703) 305-0026. The examiner can normally be reached Monday-Friday from 7:00 am to 3:30 pm EST.

34. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached on (703) 305-9798. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

35. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700 or the Customer Service Office at (703) 306-0377.

Respectfully submitted,

Lance W. Sealey

Lance W. Sealey, examiner